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09/628,059	07/28/2000	Fan Zhou	FORE-71	2638

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EXAMINER

KADING, JOSHUA A

ART UNIT PAPER NUMBER

2661

DATE MAILED: 10/29/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/628,059

Applicant(s)

ZHOU ET AL.

Examiner

Joshua Kading

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 9, 10, 13, 16, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 7, 8, 11, 12, 14, 15, 17, 18 and 21 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Specification, page 5, line 9 states, "in a network 12." There is no "network 12" in figure 22 or any of the other figures. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because the abstract is greater than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

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4. Claims 1, 2, 3, 5, 7, 12, 13, 14, 15, 17, 18, 19, 20, and 21 are objected to because of the following informalities:

5. Claim 1, line 4 states, "port cards..." It should read, --a plurality of port cards...--.

6. Claim 1, line 7 states, "fabrics..." It should read, --a plurality of fabrics...--.

7. Claim 1, line 8 states, "having queues". It should read, --having a plurality of queues--.

8. Claim 1, line 12 states, "the detecting". It should read, "the determining".

9. Claim 1, line 12 states, "mechanism dynamic". It should read, --mechanism is dynamic--.

10. Claim 1, line 12 states, "reflect changes in port". It should read, --reflect changes in the port".

11. Claim 2, line 2 states, "detecting". It should read, "determining".

12. Claim 3, line 2 states, "detecting". It should read, "determining".

13. Claim 5, line 1 states, "wherein the fabric". It should read, "wherein each fabric".

14. Claim 7, line 1 states, "wherein the fabric". It should read, "wherein each fabric".

15. Claim 12, line 1 states, "wherein the fabric". It should read, "wherein each fabric".

16. Claim 13, line 4 states, "...port cards..." It should read, --...a plurality of port cards...--.

17. Claim 13, line 10 states, "...in queues..." It should read, --...in a plurality of queues...--.

18. Claim 13, line 11 states, "the fabric corresponding..." It should read, "one fabric of the number of fabrics corresponding..."

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19. Claim 13, line 15 states, "card;". It should read, "cards;".
20. Claim 13, line 17 state, "the port card". It should read, --the port cards--.
21. Claim 13, line 21 states, "receiving more..." It should read, "receiving additional..."
22. Claim 13, line 23 states, "the more packets". It should read, "the additional packets".
23. Claim 13, line 26 states, "the more packets". It should read, "the additional packets".
24. Claim 14, line 2, states, "includes the step". It should read, "includes a step".
25. Claim 15, line 2, states, "includes the step". It should read, "includes a step".
26. Claim 17, line 2, states, "includes the step". It should read, "includes a step".
27. Claim 18, line 3, states, "includes the step". It should read, "includes a step".
28. Claim 19, line 2, states, "includes the step". It should read, "includes a step".
29. Claim 20, line 2, states, "includes the step". It should read, "includes a step".
30. Claim 21, line 2, states, "there is the step". It should read, "there is a step".
31. Appropriate correction is required.

Claim Rejections - 35 USC § 112

32. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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33. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 13, line 19 states, "changing the number of port cards in the switch." It is unclear how the number of port cards is to be changed. Is it to be done by physically removing/adding port cards, or is it to be done with software, or by some other means?

34. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35. Claims 6, 9, 10, 13, 14, 16, 19, and 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

36. In regard to claim 6, applicant discloses on lines 1-2 "the input lookup has a 10-bit field." Thus implying that the "input lookup" is a signal of some kind. However, in claim 3, line 2 the "input lookup" is defined as part of the "determining mechanism", i.e. a component of the "determining mechanism." It is unclear from the claim language if the "input lookup" is a signal or a physical component.

37. In regard to claim 9, applicant discloses on lines 2-3 state "indicate which 8 of the 10 bits of the input lookup are to be used to identify the queue the portions of the packet

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are to be stored in.” However, in claim 8 applicant discloses on lines 2-3 “bits 0-7 which identifies the output port to which the queue connects...” It is unclear from claim 9, which has all the limitations of claim 8, which set of bits identifies the queue. In claim 8 it is bits 0-7 that identify the queue; in claim 9 it is a 2 bit field from a second signal that identifies the 8 out of 10 bits that identify the queue, which could be bits 0-7 but could also be bits 1-8, or 0-4 and 6-8, or any combination of 8 bits out of the 10 bit field.

38. In regard to claim 10, applicant discloses varying combinations of bits used to identify the queue. Again, claim 10 has all the limitations of claim 9, which also has all the limitations of claim 8. Therefore, it is again unclear from claim 10 which set of bits identifies the queue.

39. In regard to claim 13, applicant discloses on line 12 “to be sent to from the respective fabrics;” It is unclear if the fabrics are sending or receiving according to the claim language.

40. Claim 13 recites the limitation “after the number of the fabrics has changed” in line 24 of claim 13. There is insufficient antecedent basis for this limitation in the claim. Nowhere prior to line 24 of claim 13 does the applicant mention “number of fabrics being changed.”

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41. In regard to claim 14, applicant discloses on lines 1-2 "the storing step". It is unclear which "storing step" applicant is referring to as there are two storing steps in parent claim 13.

42. In regard to claim 16, applicant discloses on lines 3-4 "a 10-bit field of the input lookup". Thus implying that the "input lookup" is a signal of some kind. However, in claim 14, line 2 the "input lookup" is defined as an apparatus. It is unclear from the claim language if the "input lookup" is a signal or a physical apparatus.

43. Claim 19 recites the limitation "the portion step" in lines 1-2 of claim 19. There is insufficient antecedent basis for this limitation in the claim.

44. In regard to claim 20, applicant discloses on lines 1-2 "the sending portions step". It is unclear which "sending portions step" applicant is referring to as there are several "sending portions steps" in parent claims.

Claim Rejections - 35 USC § 103

45. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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46. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiussi et al. (U.S. Patent 5,689,506) in view of Parruck et al. (U.S. Patent 6,229,812 B1) in further view of Newman (U.S. Patent 5,367,518).

47. In regard to claim 1, Chiussi et al. disclose "a switch for switching packets in a network comprising:

48. [a plurality of] port cards which send packets to and receive packets from the network" (figure 11, elements 1110 and 1150); and

49. "...each fabric having [a plurality of] queues in which portions of packets are stored, each queue corresponding to one of the port cards..." (figure 11, where element 1130 constitutes a fabric used for switching portions of the packets; figures 3, and 4 where the input ports have a plurality of queues in them as is read in col. 3, lines 65 where the buffering is taken to mean there are buffers or queues in the ports; and as can be seen from figures 3, 4, and 11 the inputs to the fabric corresponds to one input per port card).

50. However, Chiussi et al. lack "[a plurality of] fabrics connected to the port cards for switching portions of the packets... each fabric having a determining mechanism which determines which queue the portions of the packet should be placed in, the [determining] mechanism [is] dynamic to reflect changes in [the] port card quantity without any change in connection data of the packets."

51. Newman however, discloses "[a plurality of] fabrics connected to the port cards for switching portions of the packets..." (figure 13, elements 8-0, 8-1 where each fabric

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of the plurality of fabrics operates according to the fabric of Chiussi et al.). It would have been obvious to one with ordinary skill in the art at the time of invention to include the plurality of switching fabrics in place of the single fabric for the purpose of increasing switching throughput. The motivation being to allow for a higher data switching rate.

52. Parruck et al. however, disclose "...each fabric having a determining mechanism which determines which queue the portions of the packet should be placed in, the [determining] mechanism [is] dynamic to reflect changes in [the] port card quantity without any change in connection data of the packets" (figure 3, where it is clear that the data coming in on element 310 is routed or sent by a mechanism to the appropriate queue elements 302(a-x); it should also be noted that if the port card quantity were to change the determining mechanism would still be able to send the data to the appropriate queue and to thus to the final destination, allowing the connection data to remain intact).

53. It would have been obvious to one with ordinary skill in the art at the time of invention to include the "determining mechanism" with the switching mechanism to further assist the routing capabilities of the switch. The motivation being to allow for faster switching by "presorting" the data with the determining mechanism.

54. In regard to claim 2, Chiussi et al., Parruck et al., and Newman disclose the switch according to claim 1. However, Chiussi et al. and Newman lack "each fabric has a memory controller having the queues and the [determining] mechanism." Parruck et al. however, further disclose "each fabric has a memory controller having the queues

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and the [determining] mechanism" (figure 3 where the determining mechanism as defined in claim 1 and the queues, elements 302(a-x), can be considered part of the same component; in this case the memory controller has the queues (memory) and the determining mechanism (controller) all in one component as can be seen in figure 3). It would have been obvious to one with ordinary skill in the art at the time of invention to put the "determining mechanism" with the "queues" in a "memory controller" for the reasons and motivation as in claim 1.

55. In regard to claim 3, Chiussi et al., Parruck et al., and Newman disclose the switch according to claim 2. However, Parruck et al. and Newman lack "...an input lookup which identifies in which queue portions of the packet are placed." Chiussi et al. however, further disclose "...an input lookup which identifies in which queue portions of the packet are placed" (figure 8, where the tables represent address tables that store the addresses of the incoming data, thus storing the location of the data in the queues). It would have been obvious to one with ordinary skill in the art at the time of invention to include the "input lookup" with the "determining mechanism" of claim 2 for the purpose of having a list of the location of the data. The motivation being to allow for easy access to the data by use of the lookup.

Allowable Subject Matter

56. Claims 4, 5, 7, 8, 11, 12, 14, 15, 17, 18, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

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independent form including all of the limitations of the base claim and any intervening claims.

57. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Kading whose telephone number is (703) 305-0342. The examiner can normally be reached on M-F: 8:30AM-5PM.

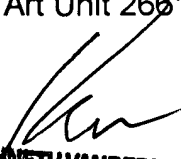
58. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

59. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.



JK
October 24, 2003

Joshua Kading
Examiner
Art Unit 2661


**KENNETH VANDERPUYE
PRIMARY EXAMINER**